



SEWER MAIN PLAN Checklist

KIVA/DIS No: _____ Project Name: _____

Reviewed by: _____ Phone Number: _____ Date: _____

Engineer: _____ Phone Number: _____

The purpose of this checklist is to offer comments on plan design for construction of sewer mains in the public right-of-way. Source of sewer development code and design policy is the Water Services Department Design Standards Manual, 1994.

This checklist serves to minimize redline comments on the check prints and to maintain consistency among plan reviewers on plans for public sewer main construction in the public right-of-way and public sewer easements. Plan approval and issuing permits depend on compliance with the comments made on the check prints and this checklist. The engineers of record shall satisfy themselves of the completeness and accuracy of the design.

Please return this checklist and check prints with your next submittal. Discussion of redline comments on plans or in this checklist should be directed to the plan reviewer listed above.

Plan approvals are valid for a period of one year from the date of the approval signature.

The following symbols are used to identify changes needed to the plans:

[X] REQUIRED

[✓] O.K.

GENERAL REQUIREMENTS:

- [] Plan shall be on 24" X 36" sheets.
- [] Symbols shall be per M.A.G. Specifications and Details supplemented by Water Services Department Details.
- [] Orientation of each plan sheet shall be shown by a north arrow and scale of drawing. (North arrow to be up or to the right.)
- [] Cover sheet shall be prepared on vellum or mylar at the time of approval.
- [] A cover sheet is required on plans of 2 sheets or more.
- [] Each sheet shall be identified by sheet number, project name, and match lines.
- [] All sheets shall have the Civil Engineer's Arizona registration seal with original signature prior to plan submittal.
- [] All plan sheets shall be sufficiently clear to allow legible prints to be reproduced from microfilm. The size of lettering and symbols shall be 1/8-inch minimum. Shading or zip tape is not permitted. Refer to Water Services Department Design Standards Manual (P-69) for information required on record drawings ("As-Built").
- [] This project is subject to a sewer line repayment as redlined on the plans. Any questions shall be directed to the Project Engineering Permit Counter, 602-262-6551. These fees shall be paid prior to the issuance of construction permits.

COVER SHEET REQUIREMENTS:

- [] Appropriate processing numbers including:
 - KIVA#, CCPR# or CSPR #, SDEV#, Building Log, Abandonment, and City Quarter Section Number in lower right corner.
- [] Project title block with name and address of project.
- [] Developer's name, address, and telephone number.
- [] Engineer's name, address, and telephone number.

- [] Signature Approval Block. (In lower right-hand corner)

APPROVED FOR:
THE CITY OF PHOENIX

COUNTY HEALTH DELEGATE
DEVELOPMENT SERVICES DEPARTMENT

DATE

- [] Provide an As-Built Certification Statement as follows (include on all sheets):

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED ENGINEER

DATE

REGISTRATION NUMBER

- [] A key map is required on plans with more than two (2) sheets. A key map is a small-scale map of the project site that provides a system overview and is used to index the plan sheets. The key map shall clearly show the following:
- All streets with names, alleys, easements, tracts, and parcels shall be identified or shown "unsubdivided."
 - Sewer mains, manholes, cleanouts, and any associated facilities. Direction of flow must be indicated. Manholes and CO's must be numbered consecutively.
 - Index of plan sheets indicated by single line with arrows showing beginning and end of each sheet.
- [] Blue Stake notification decal affixed.
- [] Material list (for right-of-way or easement work only and on-site pipe length – make two[2] separate lists).
- [] Benchmark, City of Phoenix datum. Phone (602) 495-2075 for Benchmark data at a specific location.

NOTES FOR SEWER PLANS:

- [] Development Services Department's Field Inspection Staff shall be notified 48 hours before any construction begins, telephone (602) 262-7811.
- [] All manholes newly constructed or existing and worked in for connections shall be painted with insecticide paint per City of Phoenix Specifications SSMH-PI. All 5'-0" manholes on pipe 15" (inches) and larger shall be coated per COP Supplement to MAG Sec. 625.
- [] Approval of these plans shall not prevent the City from requiring correction of errors in the plans where such errors are subsequently found to be in violation of any law, ordinance or other health/safety issue.
- [] All construction to conform to M.A.G. Specifications and Details, City of Phoenix Supplement to M.A.G. Specifications and Details, unless modified on the plans.
- [] All lines must have a T.V. inspection before accepted as complete (See City of Phoenix Supplement to M.A.G. Specification Section 615.9.1).
- [] Traffic Regulations: All work must comply with requirements of the current City of Phoenix "Traffic Barricade Manual."
- [] The following M.A.G. Details are specifically not approved:
- 425 24" aluminum frame and cover.
- [] New manholes are to be built without steps.
- [] Compaction shall comply with M.A.G. Sec. 601 & C.O.P Supplements.
- [] New sewer lines are to be built in Standard Utility Locations.
- [] A six (6) foot minimum horizontal separation from any underground utility shall be provided for sewer mains, sewer services, water mains, and water services. The minimum horizontal separation is measured from outside of sewer main, sewer service, water main, or water service to outside of underground utility.

- [] A one (1) foot minimum vertical separation from any dry underground utility crossing shall be provided for sewer mains, sewer services, water mains, and water services. The minimum vertical separation is measured from outside of sewer main, sewer service, water main, or water service to outside of dry underground utility.
- [] A two (2) foot minimum vertical separation shall be provided between any sewer main or storm drain main crossing a water main. The minimum vertical separation is measured from outside of water main to outside of sewer main or storm drain main. See M.A.G. Standard Detail 404 for additional information and/or provisions for clearance.
- [] Exceptions or deviations from the above minimum clearances must be approved and shown on the approved water and sewer plans. When utility conflicts are found during construction, all changes and revisions must be preceded by an approved plan revision.
- [] Any and all more stringent separation requirements required by Federal, State, County, or local codes or ordinances take precedence.
- [] Any sewer lines that are installed with less than .004ft/ft slope must be installed using a laser.
- [] When DIP sewer pipe is used lining is required per COP Supplement to MAG Sec. 750.1.
- [] Any sewer main 12' in depth or greater requires 5' manholes.
- [] Concrete or asphalt damaged during the course of construction shall be removed and replaced in kind prior to final inspection.
- [] "Per City of Phoenix Ordinance G-4396, these plans are for official use only and may not be shared with others except as required for the construction of the public works facilities shown hereon. The Project Owner, and the Owner's Lenders, Consultants, Contractors and Subcontractors are prohibited from disclosing the plans and specifications to any persons other than those who have a need to know the information for the purpose of the Project." (NOTE IS REQUIRED ON ALL SHEETS INCLUDING COVER SHEET)
- [] A pavement cut surcharge shall be assessed on this project for any trenching or potholing in new asphalt pavement that is less than 30 months old. Surcharge fees assessed are in addition to the regular permit fees and are over and above any special backfill, compaction, and pavement replacement stipulations that may be imposed as a condition of permitting. Pavement cut surcharge fees is assessed in accordance with Section 31-38 of the Phoenix City Code.

OPTIONAL NOTES FOR SEWER PLANS:

- [] For lots fronting an existing sewer main, sewer services shall be constructed by the contractor after proper application and payment of prevailing fees for City forces to provide the connection or "wye" in accordance with Water Services Dept. Policy P-1, Sewer Ordinance G-2358, Section D. For information, call 262-6551.
- [] This plan is approved subject to completion of some lines labeled "EXISTING" which have been proposed as a part of another development. The developer of this project may be required to construct those lines per City requirements prior to receiving service for this project.

PLAN AND PROFILE SHEETS:

The plan and profile sheets shall show the following to proper scale:

- [] Title block shall be on all sheets.
- [] All sheets shall be numbered with match lines (if required).
- [] Orientation of each sewer line shall be shown by a north arrow and scale of drawing. (North arrow to be up or to the right.)
- [] New manholes built on existing lines require showing its station from the nearest existing downstream manhole and its distance to the nearest upstream manhole. Note C.O.P. manhole number, inverts, rim and slope.
- [] All existing and proposed utilities shall be shown with size, material, and location in right-of-way in plan and profile.
- [] Rim and flowline elevations shall be shown for all manholes and cleanouts.
- [] Proposed finished grades at centerline of sewer shall be shown in profile with a solid line. Existing grades of ground surface at centerline of sewer shall be shown with a dashed line.
- [] Show and dimension all right-of-way and easements.
- [] Pavement replacement thickness and type per M.A.G. Sec. 336, and COP DTL P-1200, or replace in kind, whichever is greater ("T" top is not allowed within the City of Phoenix.)
- [] Any special notes.
- [] Show existing and proposed paving. Shading is not allowed. Cross-hatching is acceptable.
- [] 3'-0" minimum horizontal clearance between sewer services.
- [] 6'-0" minimum horizontal clearance between water and sewer lines, water and sewer services, and between sewer mains and all other utility lines, outside of pipe to outside of pipe.
- [] Use City of Phoenix "Standard Utility Locations".
- [] The minimum easement width for sewer mains shall be as follows:

<u>Main Diameter</u>	<u>Easement Width</u>
Less than 16 inch	Sewer diameter plus 22 feet plus 2 times depth to pipe bottom
16- 30 inch	Greater of 50 feet or (sewer diameter plus 22 feet plus 2 times depth to pipe bottom)
Greater than 20 inch	80 feet

- [] Sewer line stationing is always from downstream manholes, with ties to monument lines at manholes. Stationing is always upstream. Accumulative station is not allowed.
- [] Each lot in subdivision to be served by separate tap, with stationing from nearest downstream manhole.
- [] Encasement of water and sewer lines per M.A.G. Std. Detail 404. Show in plan and profile. Double protection is required when sewer crosses over water.
- [] Show total lineal feet of pipe between manholes with calculated slope in ft./ft.
- [] Review all slopes; must meet minimum for pipe diameter with velocity between 2 and 9 ft. per second.
- [] Show all utilities in plan and profile. Where City utilities cross other utilities, show complete dimensional data measured from street monument lines.
- [] Show all streets, alleys and easements. Streets shall be identified by name. Streets, alleys and easements shall be dimensioned at least once and at all breaks. Monument line of streets shall be shown.
- [] All abutting lots shall be identified by lot number, tract and subdivision or shown "unsubdivided."
- [] Locate all existing and proposed utilities, structures, paving, and other topographic features affected by construction.
- [] Label all connections to existing sewer lines with method of connection specified.
- [] Existing and proposed water main size and location must be shown. Water main shall be shown in a "lighter weight" line to identify it as being information only and not part of this construction plan. Label as existing or proposed.
- [] Vertical scale shall be 1" = 2' or 1" = 4'. Horizontal scale shall not be smaller than 1" = 40'. For major streets and cases of unusual topography or complex situations, where more detail is necessary, then the scale shall be 1" = 20'.
- [] For waterline to be relocated because of sewer conflicts, show all valves involved in shutdown, with City Quarter Section Valve Numbers as labeled. Plan may be required for such relocation.
- [] For reclaimed water see other checklist and MAG Sec. 616.
- [] Discussion of redline comments on plans or in this checklist should be directed to the plan reviewer.
- [] Sewer taps not to be under sidewalk ramps and driveways, if possible.
- [] 5' manhole required over 15" and larger sewer lines and on sewer mains 12' in depth or greater. (Special notes on cover.)
- [] Special detail required for connection to RCP. No new manhole on RCP.

ITEMS REQUIRED BEFORE FINAL APPROVAL:

- [] Utility conflict notice from Utility Coordination – EAS 7th Floor is no longer necessary. EAS does not provide this service at this time. All water and sewer mains are required to be installed in the standard locations unless there are existing conflicts or there is no right of way or easement or it cannot be obtained.
- [] Utility conflicts from appropriate utility companies or print disclaimer on plan signed and sealed by engineer – attached with 1st review comments.
- [] Signed agreement form indicating a standard or repayment agreement. The signed form is required – attached with 1st review comments.
- [] Print disclaimer on plan and sign and seal by engineer. Disclaimer can only be used for single cuts perpendicular to traffic.

UTILITY CONFLICT NOTICE DISCLAIMER:

I hereby certify that all utility companies with facilities in the area of this project have been contacted and the data provided is shown on this plan. I agree to indemnify, defend, save and hold harmless the City of Phoenix, its officers, officials, agents, employees, and volunteers from any and all claims, demands, actions, liabilities, damages, losses, or expenses incurred for any utility conflicts that may arise.

Signature and seal

Date

- [] Application for main extension – attached with 1st review comments.
- [] One copy of the plat.
- [] One copy of the document used to request easement/right-of-way dedication. The plan indicates a dedication is required for _____.
- [] One copy of concerning Lot Consolidation papers completed.
- [] One copy of the Map of Dedication.
- [] Red lines of this review.

[] Special notes from this reviewer:

ADVISORY:

- [] A pavement cut surcharge may be assessed on this project for trenching in new asphalt pavement or overlay. This fee may assessed in addition to the regular permit fees and is over and above any special backfill, compaction, and pavement replacement stipulations that may be imposed as a condition of permitting. Surcharge affects streets newly paved and newly overlaid.
- [] This project may be eligible for a repayment agreement. SEE ATTACHED INFORMATION.

PLANS FOR REVISION OR UPDATE:

- [] All plans submitted for revision after the original approval shall be re-approved with a revision number as shown. The nature of the revision must also be called out on the bottom of the cover sheet and on the sheet(s) being revised. The revision number itself shall consist of a numeral within a delta and a number inside the delta as shown:

(Only revisions for approval after initial plan approval shall use triangles.)

- [] Resealed, signed and dated. If the plan is by a new engineer, the plan must be resealed and signed.
- [] A new signature approval block with a delta to the left and numbered accordingly.
- [] Signature Approval Block for revised plans:

**APPROVED FOR:
THE CITY OF PHOENIX**

COUNTY HEALTH DELEGATE
DEVELOPMENT SERVICES DEPARTMENT

DATE

UPDATES:

All plans submitted for update require a new signature block and are to be resealed by the submitting engineer.

Plan approvals for updates and/or revision re-approvals are valid for a period of one year from this date of approval signature.

This publication can be made available in alternate formats (Braille, large print, computer diskette, or audiotape) upon request. Contact the Development Services Department at (602) 262-7811 (voice) or (602) 534-5500 (TTY).